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#14

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/771,209B

DATE: 04/21/2003 P.6

TIME: 15:26:47

Input Set : A:\38586-B.txt

Output Set: N:\CRF4\04212003\I771209B.raw

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3 <110> APPLICANT: Buck, Linda B
4   Axel, Richard
6 <120> TITLE OF INVENTION: Odorant Receptors and Uses Thereof
8 <130> FILE REFERENCE: 38586-B
10 <140> CURRENT APPLICATION NUMBER: US 09/771,209B
11 <141> CURRENT FILING DATE: 2001-01-26
13 <150> PRIOR APPLICATION NUMBER: US 08/129,079
14 <151> PRIOR FILING DATE: 1993-10-05
16 <160> NUMBER OF SEQ ID NOS: 98
18 <170> SOFTWARE: PatentIn version 3.1
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23 <213> ORGANISM: Rattus sp.
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30 cttgggaacc tgcttatcat tatggccatc atcacacagt ctcatattgca tacacccatg      180
32 tactttttcc ttgctaacct atcctttgtg gacatctgtt tcacctccac caccatccca      240
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38 tatgaccgat atgtggctaa ctgtcaccca ctgtgttaca cagtccattgt gaaccaccgg      420
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42 agcttaattg tgctacagtt gaccttctgt ggagatgtga aaatccctca cttcttctgt      540
44 gaacttaatc agctgtccca actcacctgt tcagacaact ttccaagtca cctcataatg      600
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67 aaagacctac aacccttat ttatggtctt tttctctcta tgtacctggt tactgtcatt      120
69 ggaaacatat ccattattgt ggctatcatt tcagatccct gtctgcacac ccccatgtat      180
71 ttcttctctc ctaacctgtc ctttgtggac atctgtttca ttccaaccac tgttccaaag      240
73 atgttagtga acatccagac ccaaaacaat gtcacacact atgcaggatg cattaccag      300
75 atatactttt tcttgcctct tgtagaattg gacaacttct tgctgactat catggcctat      360
77 gaccgttacg tagccatctg tcaccccatg cactacacag ttatcatgaa ctacaagctc      420

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79 tgtggatttc tggttctggt atcttggatt gtaagtgttc tgcattgcctt gtttcaaagc 480
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83 cctaatacagg tgattcaact cacctgttct gatgcatttc ttaatgatct tgtgatatat 600
85 ttacacttg tgctgctggc tactgttcct ctgctggca tcttctattc ttacttcaag 660
87 atagtgtcct ccatatgtgc tataatcgta gttcatggga agtacaagc attctccacc 720
89 tgtgcatctc acctttcagt cgtgtcttta ttttactgca caggactagg agtgtaacctc 780
91 agttctgctg caaacaacag ctacacaggca agtgccacag cctcagtcac gtacactgta 840
93 gttaccccta tggatgaacc ttttatctat agtcttagga ataaagatgt taagagtgtt 900
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120 tgtgtcctgc ttgttgtggg gtcattgggt gtagccaaca tgaattgtct gttgcacata 480
122 ctgctcatgg ctgcactctc cttctgtgca gacaacatga tccccactt cttctgtgat 540
124 ggaactcccc tctgaaact ctctgctca gacacacatc tcaatgagct gatgattctt 600
126 acagagggag ctgtggtcat ggtaacccca tttgtctgca tctctatctc ctacatccac 660
128 atcacctgtg ctgtcctcag agtctcatcc cccaggggag gatggaaatc cttctccacc 720
130 tgtggctccc acctggctgt ggtctgcctc ttctatggca ccgtcatcgc tgtgtatttc 780
132 aacctcatct cctctcactt agctgggagg gacatggcag ctgcagtgat gtatgcagt 840
134 gtgaccccaa tctgaaccc ttctatctat agcctgagga acagcgacat gaaagcagct 900
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142 <213> ORGANISM: Rattus sp.
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149 acggtagtgt gaaacctagc catcatctcc ctggtaggtg cccacagatg cctacagaca 180
151 ccatgtact tcttctctg caacctctcc ttctggaga tctggttcac cacagcctgc 240
153 gtaccaaga ccttggccac atttgccgct cggggtggag tcatttctct ggctggctgt 300
155 gccacacaga tgaactttgt cttttctttg ggctgtaccg agtacttctt gctggctgtg 360
157 atggcttatg accgctacct ggccatctgc ctgccaactgc gctatgggtg catcatgact 420
159 cctgggctgg cgatgcggtt ggccctggga tcttggctgt gtgggttttc tgcaatcaca 480
161 gttcctgcta cctcattgc ccgctctctt ttctgtggct cactgtcat caaccacttc 540
163 ttctgtgaca ttctgcctg gatagtgtt tcttgcaccg acacgcaggt ggtggaactg 600
165 gtgtcctttg gcattgcctt ctgtgttatt ctgggctcgt gtggtatcac actagtctcc 660
167 tatgcttaca tcatcactac catcatcaag attcctctg cccggggccg gcaccgcgc 720
169 ttctcaacct gctcatccca tctcactgtg gtgctgattt ggtatggctc caccatcttc 780

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171 ttgcatgtga ggacctcggt agagagctcc ttggacctca ccaaagctat cacagtgtc 840
173 aacaccattg tcacacctgt gctgaaccct ttcatatata ctctgaggaa caaggatgtc 900
175 aaggaagctc tgcgcaggac ggtgaagggg aagtga 936
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179 <211> LENGTH: 939
180 <212> TYPE: DNA
181 <213> ORGANISM: Rattus sp.
183 <400> SEQUENCE: 5
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188 ggaaacctgc taatcattgt ccttggtcga ctggactctc atctccacat gcccatgtac 180
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194 ctgtactttt ttatgggttt tggagatatg gagagcttcc ttcttgggt catggcctat 360
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200 ctactcattg ctagattgtc tttttgtgag aagaatgtga ttcttcaact tttctgtgac 540
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206 attttcttct ccattttgaa gtttccatct attcaggaca tctacaaggt attctcaacc 720
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210 tgtccatcag gtaataattc tactgtgaag gagattgcca tggctatgat gtacacagtg 840
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251 gtgaccccca tgctgaaccc ctcatctac agcctgagga acagagacat gaaagaggca 900
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257 <211> LENGTH: 933
258 <212> TYPE: DNA
259 <213> ORGANISM: Rattus sp.

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266 ttgctaataca ttgtacttgt tcaactggac tcccagctcc acacacctat gtatttgttt      180
268 ctcagcaatt tgtctttctc tgatctatgt ttttcctctg tcacaatgcc caagctgctg      240
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272 ttcttttatgg tttttggaga tatggagagt ttcttcttgg tggccatggc ctatgaccgc      360
274 tatgtggcca tctgcttccc tctgcattac accagcatca tgagcccaa gctctgtaac      420
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288 gcaggtaata attccactgt aaaagagatg gtcatggcca tgatgtacac tgtggtgacc      840
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305 actgaaaaca tgcctcatcat tatagcaatt aggaaccacc caaccctcca caaaccatg      180
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327 attttcatct atgccaggcc taaggcactc tcagcttttg acaccaacaa gctggtctct      840
329 gtactctacg ctgtcattgt accgttgttc aatcccatca tctactgctt gcgcaaccaa      900
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348 ctcagcaact tgtccttctc tgatctctgc ttttcctctg ttacaatgct gaaattgctg      240
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Input Set : A:\38586-B.txt

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356 tgtctcctgc tggatttttg gataatgaca tcatctcatg ccattgatga caccctgctt 480
358 gcagcaagat tgtctttttg tgagaacaat gtactcctca actttttctg tgacctgttt 540
360 gttctcctaa agttggcctg ctcagacact tatgttaatg agttgatgat acatatcatg 600
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364 tctccattc ttaaggttcc atctactcaa agcattcaca aggtcttctc cacttgtggt 720
366 tctcatctct ctgtggtgct tctgttctac gggacaatta ttggtctcta tttatgtcca 780
368 tcaggtgata attttagtct aaaggggtct gccatggcta tgatgtacac agtggttaact 840
370 ccaatgctga acccgttcat ctacagccta agaaacagag acatgaagca ggccctaata 900
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377 &lt;212&gt; TYPE: DNA

378 &lt;213&gt; ORGANISM: Rattus sp.

380 &lt;400&gt; SEQUENCE: 10

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385 gggaacctca tcatcatcat cctcattcta ctggactccc atctccacac acccatgtac 180
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407 tgtccttcag ctaataactc cactgtgaag gagactgtca tgtctttgat gtacacaatg 840
409 gtgacaccca tgctgaaccc cttcatctac agcctaagaa acagagacat aaaagatgca 900
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417 &lt;213&gt; ORGANISM: Rattus sp.

419 &lt;220&gt; FEATURE:

420 &lt;221&gt; NAME/KEY: misc\_feature

421 &lt;222&gt; LOCATION: (440)..(441)

422 &lt;223&gt; OTHER INFORMATION: n = unknown

425 &lt;400&gt; SEQUENCE: 11

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430 gacagcttac tctgactgt gatggcctat gaccggtttg tggccatctg tcacccctg 180
432 cactacacag tcattatgag ctcttggtc tgtggactgc tggttctggt gtccctggatc 240
434 gtgagcatcc tatattctct gttacaaagc ataatggcat tgcagctgtc cttctgtaca 300
436 gaactgaaaa tccctcaatt tttctgtgaa cttaatcagg tcatccacct tgcctgtcc 360
438 gacactttta ttaatgacat gatgatgaat tttacaagtg tgctgctggg tgggggatgc 420
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RAW SEQUENCE LISTING ERROR SUMMARY  
PATENT APPLICATION: US/09/771,209B

DATE: 04/21/2003  
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Input Set : A:\38586-B.txt  
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Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:11; N Pos. 440,441  
Seq#:12; Xaa Pos. 147  
Seq#:13; N Pos. 182,205,206,207,208,209,210,211,212,213,214,215,216,217,218  
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Seq#:13; N Pos. 369,370,371,372,373,374,375,376,377,378,379,380,381,382,383  
Seq#:13; N Pos. 384,385,386,387,388,389,390,391,392,393,394,395,396,397,398  
Seq#:13; N Pos. 399,400,401,402,403,404,405,406,407,408,409,410,411,412,413  
Seq#:13; N Pos. 414,415,416,417,418,419,420,421,422,423,424,425,426,427,428  
Seq#:13; N Pos. 494,495  
Seq#:14; Xaa Pos. 61,68,69,70,71,72,73,74,75,76,77,78,79,80,81,82,83,84,85  
Seq#:14; Xaa Pos. 86,87,88,89,90,91,92,93,94,95,96,97,98,99,100,101,102,103  
Seq#:14; Xaa Pos. 104,105,106,107,108,109,110,111,112,113,114,115,116,117  
Seq#:14; Xaa Pos. 118,119,120,121,122,123,124,125,126,127,128,129,130,131  
Seq#:14; Xaa Pos. 132,133,134,135,136,137,138,139,140,165  
Seq#:21; N Pos. 270,271,272,273,274  
Seq#:22; Xaa Pos. 90,91  
Seq#:23; N Pos. 1,236,237,238,239,240,241,242,243,244,245,246,247,248,249  
Seq#:23; N Pos. 250,251,252,253,254,255,256,257,258,259,260,261,262,263,264  
Seq#:23; N Pos. 265,266,267,268,269,270,271,272,273,274,275,276,277,278,279  
Seq#:23; N Pos. 280,281,282,283,284,285,286,287,288,289,290,291,292,293,294  
Seq#:23; N Pos. 295,296,297,298,299,300,301,302,303,304,305,306,307,308,309  
Seq#:23; N Pos. 310,311,312,313,314,315,316,317,318,319,320,321,322,323,324  
Seq#:23; N Pos. 325,326,327,328,329,330,331,332,333,334,335,336,337,338,339  
Seq#:23; N Pos. 340,341,342,343,344,345,346,347,348,349,350,351,352,353,354  
Seq#:23; N Pos. 355,356,357,358,359,360,361,362,363,364,365,366,367,368,369  
Seq#:23; N Pos. 370,371,372,373,374,375,376,377,378,379,380,381,382,383,384  
Seq#:23; N Pos. 385,386,387,388,389,390,391,392,393,394,395,396,397,398,399  
Seq#:23; N Pos. 400,401,402  
Seq#:24; Xaa Pos. 79,80,81,82,83,84,85,86,87,88,89,90,91,92,93,94,95,96,97  
Seq#:24; Xaa Pos. 98,99,100,101,102,103,104,105,106,107,108,109,110,111,112  
Seq#:24; Xaa Pos. 113,114,115,116,117,118,119,120,121,122,123,124,125,126  
Seq#:24; Xaa Pos. 127,128,129,130,131,132,133,134  
Seq#:25; N Pos. 236,237,238,239,240,241,242,243,244,245,246,247,248,249,250  
Seq#:25; N Pos. 251,252,253,254,255,256,257,258,259,260,261,262,263,264,265  
Seq#:25; N Pos. 266,267,268,269,270,271,272,273,274,275,276,277,278,279,280

**RAW SEQUENCE LISTING ERROR SUMMARY**  
PATENT APPLICATION: US/09/771,209B

DATE: 04/21/2003  
TIME: 15:26:48

Input Set : A:\38586-B.txt  
Output Set: N:\CRF4\04212003\I771209B.raw

Seq#:25; N Pos. 281,282,283,284,285,286,287,288,289,290,291,292,293,294,295  
Seq#:25; N Pos. 296,297,298,299,300,301,302,303,304,305,306,307,308,309,310  
Seq#:25; N Pos. 311,312,313,314,315,316,317,318,319,320,321,322,323,324,325  
Seq#:25; N Pos. 326,327,328,329,330,331,332,333,334,335,336,337,338,339,340  
Seq#:25; N Pos. 341,342,343,344,345,346,347,348,349,350,351,352,353,354,355  
Seq#:25; N Pos. 356,357,358,359,360,361,362,363,364,365,366,367,368,369,370  
Seq#:25; N Pos. 371,372,373,374,375,376,377,378,379,380,381,382,383,384,385

## VERIFICATION SUMMARY

DATE: 04/21/2003

PATENT APPLICATION: US/09/771,209B

TIME: 15:26:48

Input Set : A:\38586-B.txt

Output Set: N:\CRF4\04212003\I771209B.raw

L:440 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11 after pos.:420  
L:498 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12 after pos.:144  
L:548 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13 after pos.:180  
M:341 Repeated in SeqNo=13  
L:602 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14 after pos.:48  
M:341 Repeated in SeqNo=14  
L:922 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:21 after pos.:240  
L:966 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:22 after pos.:80  
L:1004 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23 after pos.:0  
M:341 Repeated in SeqNo=23  
L:1056 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:24 after pos.:64  
M:341 Repeated in SeqNo=24  
L:1114 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:25 after pos.:180  
M:341 Repeated in SeqNo=25  
L:1160 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:26 after pos.:64  
M:341 Repeated in SeqNo=26  
L:1218 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27 after pos.:180  
L:1256 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:28 after pos.:48  
L:1372 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:31 after pos.:120  
L:1412 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:32 after pos.:48  
L:1524 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:35 after pos.:180  
M:341 Repeated in SeqNo=35  
L:1566 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:36 after pos.:64  
M:341 Repeated in SeqNo=36  
L:1648 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:37 after pos.:0  
L:1697 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:38 after pos.:0  
L:1758 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:39 after pos.:0  
L:1801 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:40 after pos.:0  
L:1862 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:41 after pos.:0  
L:1911 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:42 after pos.:0  
L:1948 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:43 after pos.:0  
L:1997 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:44 after pos.:0  
L:2040 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:45 after pos.:0  
L:2089 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:46 after pos.:0  
L:2132 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:47 after pos.:0  
L:2163 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:48 after pos.:0  
L:2224 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:49 after pos.:0  
L:2332 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:55 after pos.:0  
L:2366 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:56 after pos.:0  
L:2400 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:57 after pos.:0  
L:2434 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:58 after pos.:0  
L:2462 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:59 after pos.:0  
L:2490 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:60 after pos.:0  
L:2524 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:61 after pos.:0  
L:2558 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:62 after pos.:0  
L:2580 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:63 after pos.:0  
L:2602 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:64 after pos.:0  
L:2641 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:65 after pos.:0



**VERIFICATION SUMMARY**

DATE: 04/21/2003

PATENT APPLICATION: US/09/771,209B

TIME: 15:26:48

Input Set : A:\38586-B.txt

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L:2680 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:66 after pos.:0

L:2713 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:67 after pos.:0